
MICROSOFT EXCEL

SPRING 2009
ADVANCED TRACK



EX:PRACTICE #1

1. Create a new workbook.
2. In **B1**, type **Spring 2008**.
3. In **F1**, type **NJIT**; in cell **G2**, type **Teacher's Course**.
4. In **B3**, type **LABS**.
5. In **C3**, **D3**, **E3**, type **Lab1**, **Lab2**, and **Lab3** respectively.
6. **B5**, corresponds to **Richards, Sue** and her lab grades are **100, 90, 85**. Type it in.
7. **B6**, corresponds to **Murdock, Matt** and his lab grades are **80, 88, 89**. Type it in.
8. **B7**, corresponds to **Parker, Peter** and his lab grades are **80, 70, 75**. Type it in.
9. Add yourself and another name as students in rows **8** and **9**. Make up grades for both.
10. In **J3**, type **Total Points**; in **K3**, type **Average**.
11. Compute the Total points and Average for each student. Use formulas or functions.
12. Save it as **NJIT Practice1**

SELECTING NON-ADJACENT CELLS

- This feature is useful when certain cells must be selected and they are not contiguous.
 1. Select your first group of adjacent cells.
 2. Press and hold the **Ctrl** key.
 3. Select another group of cells.
 4. Release the **Ctrl** key when you have selected all the group of cells that you want.

WORKSHEET FORMATTING

- *Changing the formatting for the entire spreadsheet*
 - It allows applying the same formatting to all cells in the worksheet at the same time.
 1. Click the **Select All button** immediately above row heading 1 and to the left of column heading A.
 1. In the **Format** menu, use the appropriate formatting options.
 - *Rotating Text*
 1. Select the cell or range of cells you want to rotate.
 2. Right-click and select **Format Cells...** The Format Cells dialog box will appear.
 3. Click the **Alignment** tab.
 4. On the right side, you will see a section called **Orientation**. Locate the number of degrees.
 5. Type a value for number of degrees to rotate the text. The default is 0 (no rotation).
 6. Click **OK**.
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WORKSHEET FORMATTING

- *Format Painter*

- Copies a format from one or more cells to paste it into one or more cells.
 1. Click the cell where you want to copy the format from.
 2. Click the Format Painter button on the standard toolbar (looks like brush)
 3. Click the destination cell that needs to have the same format as the cell from step 1.

- *Drop Shadow*

- Gives shadow effect to the cells.
 1. If you don't see the drawing toolbar, enable it by right-clicking on the toolbar area and click **Drawing**. It should appear at the bottom.
 2. Select the cell or range of cells that you want to have the shadow.
 3. Click **Shadow Style** button in the drawing toolbar (second from right to left)
 4. Select a shadow style
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EX: PRACTICE #2

1. Select only **B1**, **F1**, **G2**, and **B3** and change their font color to **Dark blue**, **bold** and **italics**.
2. Make the entire spreadsheet use the **COMIC SANS MS** font.
3. In **C3**, rotate **Lab1** in a **90** degree angle.
4. Copy the format in **C3**, to the range **D3:K3**.
5. Apply **Shadow Style 6** to the range **C3:K3**.
6. Change the name of your sheet to **Labs**.
7. Re-save your work.

USING CONDITIONAL FORMATTING

1. Click on a cell or select a range of cells.
 2. Click **Format** on the menu bar, and click **Conditional Formatting**. You will see the **Conditional Formatting** dialog box.
 3. Click the first drop-down list (from left to right) and select **Cell Value Is.**
 4. Click the second drop-down list and select the criteria for the conditional formatting. For example if you want the cell values greater than 5 to be colored in blue, you will first select **greater than**.
 5. Click the **Format button**, and then click the **Fonts Tab**. Select color blue for the font.
 6. Click **OK**.
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DISPLAYING AND PRINTING FORMULAS

1. Click **Tools** on the menu bar.
2. Click **Options**. You will see the **Options** dialog box appear.
3. Click the **View** tab if it's not already selected.
4. Locate a section at the bottom of the **Options** dialog box named **Window options**.
5. Click the checkbox **Formulas** making sure you put a checkmark there.
6. Click **OK**.

INSERTING A SHEET

- If your workbook needs additional worksheets, these can be added.
 1. Point to the sheet tab of the sheet you want to remove.
 2. Right-click the sheet tab and a pop-up menu appears.
 3. Click **Insert**.
 4. Under the General tab, click on **Worksheet**.

DELETING A SHEET

- If your workbook doesn't need additional worksheets, these can be removed.
 1. Point to the sheet tab of the sheet you want to remove.
 2. Right-click the sheet tab and a pop-up menu appears.
 3. Click **Delete**.
 - If the sheet contains data a window will appear warning you that you have data there.
 4. Click the **Delete** again to remove the sheet or **Cancel** if you change your mind.

EX: PRACTICE #3

1. Apply conditional formatting to the range that contains the grade average for each student.
 - Any value below **60**, should appear in **red**.
 - Any value between **61** and **70** should appear in **orange**.
2. Display your formulas on the worksheet.
3. Add a new worksheet to your workbook. Name the worksheet **Homework**.
4. Delete all worksheets, EXCEPT **Labs** and **Homework**.
5. Re-save your work.

CREATING A CHART

1. Select the range of values (cells) that you want to use for your chart.
2. Click the **Chart Wizard button** or click **Insert** on the menu bar and then click **Chart**.
3. Select the desired chart type (Pie, bar, etc...), the chart sub-type (**Clustered column with a 3-D visual effect, Clustered Column, etc...**).
4. Click **Next**. This takes you to the **Source Data** window.

CREATING A CHART

5. You can choose whether you want the series in rows or columns.
6. You make the selection according on the way you want the data to be presented.
7. Click the Series tab.
8. In the Series section, you can proceed to rename the contents of the legend box, using the proper names or labels for your data.
9. By default, Series1 is highlighted.
10. If you want to rename Series1 by a more descriptive name in your spreadsheet, click the button next to the **Name** textbox.

CREATING A CHART

11. Once you do that, the **Source Data – Name:** window will appear.
12. Click on the cell that contains the name or label that you want to associate with a specific Series.
13. You will see now in the window the cell reference that you just clicked.
14. Click the button of the **Source Data – Name:** window.
15. This will return you to the **Source Data** window.
 - **IMPORTANT:** By doing this, instead of just typing the name, guarantee you that if you change that name in your worksheet, that change will automatically be reflected in your chart.

CREATING A CHART

16. Click on the other Series and repeat steps 8-15.
 17. Click **Next** when done.
 18. After you select the Titles tab, you can enter the chart's title and the titles for both axes.
 19. Click Next. This takes you to the Chart Location window
 20. Select the place where you want to put the chart.
 - If you select **As New Sheet**, the chart will be created in a separate worksheet.
 - If you select **As Object in**, it's going to insert the chart in whichever sheet that you specified.
 21. Click **Finish**.
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EX: PRACTICE #4

1. Create a column chart with the following options.
 - Range: **B3:E3, B5:E9.**
 - Chart subtype: **Clustered Column with a 3D Visual Effect.**
 - Display the data by student.
 - Chart Title: **First Three Labs by Student (Fall 2007)**
 - Category (X) Axis: **Student Name**
 - Value (Z) Axis: **Lab Grades.**
 - Sheet Name: **First Three Labs**
2. Create a line chart for the 5 students' lab grades. Each line must represent an individual student. Make sure you give it the proper titles and labels.
3. Re-save your work.

ENHANCING A CHART

■ *Titles*

- Changes the appearance of any chart title
 1. Right-click the title. A pop-up menu appears.
 2. Click **Format [Type] Title**. The Format [Type] Title dialog box appears (Type refers to Chart or Axis titles).
 3. Click:
 - **Patterns tab** to add border, background color, and shadow.
 - **Font tab** to change font color, size, style, etc.
 - **Alignment tab** to change text alignment and orientation.

■ *Axis Values*

1. Can change the appearance of these, then
 1. Right-click on any of these values. A pop-up menu appears.
 1. Click **Format Axis...** The Format Axis dialog box appears.
 2. Click
 - **Font tab** to change font color, size, style, etc.
 - **Number tab** to change format of value (General, Scientific, etc.)
 - **Alignment tab** to change text alignment and orientation.
 - **Scale tab** to change min and max values, # of categories between tick marks, etc.
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ENHANCING A CHART

■ *Data Series*

- Changes the appearance of all chart series (columns, slices, etc.)
 1. Right-click the any point of the chart series. A pop-up menu appears.
 2. Click **Format Data Series**. The Format Data Series dialog box appears.
 3. Click:
 - **Patterns tab** to add border, background color, and shadow.
 - **Shape tab** to change shape of the series (cylindrical, conical, etc.).
 - **Data labels tab** to display series or category name, or value on top of each data point.
 - **Options tab** to change gap depth, gap width and chart dept.

■ *Walls and Floor*

1. Can change the appearance of these, then
 1. Right-click on any of these. A pop-up menu appears.
 1. Click **Format [Type]** where type refers to the walls or the floor.
 2. Click
 - **Patterns tab** to add border, and background color.
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CHARTS AS OBJECTS

- As previously discussed, charts can be created either as objects in a sheet or they can be placed in a separate sheet.
- If the chart was created as an object, it can be resized, moved, or deleted easily.
 - **Resize**
 1. Click and hold corner squares to resize vertically and horizontally, after clicking on the chart object to select it.
 2. Drag the mouse to resize.
 - **Move**
 1. Click on the chart object to select it.
 2. Move the mouse pointer inside the chart, until the pointer changes to four arrows. Then, click and drag the chart.
 - **Delete**
 - Press the **Del** key or click **Edit** on the menu bar, point to **Clear** and then click **All** after selecting the chart.

EX: PRACTICE #5

1. For the column chart, make the following changes
 - Chart Title: put its title in **Italics** and font size **26**.
 - Put the grade of each lab on top of its respective column.
 - Change **lab #1** column to **conical** shape, **lab #2** to **cylindrical** shape, and **lab #3** to **pyramidal** shape.
 - Add a **border** and **background color** or texture to the chart.
 - Apply **shadow** to the chart's border.
 - Change the **floor** color to light green and the **wall** color to any color that makes good contrast with the current colors.
 - Rotate the Z values **45** degrees.
2. For the line chart do all of the above, except for the shapes. Make the lines thicker and change their line colors.
3. Re-save your work.

CUSTOM TEMPLATES

- It is a workbook used as a pattern for creating other workbooks.
 1. Decide which type of template you want: a workbook template (contains several sheets) or a worksheet template (contains only one sheet).
 2. Create the workbook with everything the template would need (text, values, formulas, formatting, etc).
 3. In the **File** menu, click **Properties** and then click **Save Preview Picture**. This will display the first sheet of the template in the preview window.
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CUSTOM TEMPLATES

4. Click on **Save As** from the **File** menu. The Save As dialog box appears.
5. In the **Save as type** textbox, click on the drop down list and select **Template**.
 - Notice that the template will be saved with the other preexisting Microsoft templates by default.
6. Type a name for the template.
7. Click the **Save** button.

LOCKING AND PROTECTING CELLS

- When working with workbooks, especially templates, you may want to lock certain cells (those containing formulas) to prevent them from being accidentally modified.
 1. Click on the gray rectangle to the left of column letter A. This highlights the entire worksheet.
 2. Click on **Cells** from the **Format** menu. The Format Cells dialog box appears.
 3. Remove the checkmark from the **Locked** (prevents editing) and **Hidden** (hides formulas) check boxes under the **Protection** tab.
 4. Click **OK**.
 5. Select all the cells that require protection from editing.
 6. Click on **Cells** from the **Format** menu. The Format Cells dialog box appears.
 7. Put a checkmark in the **Locked** and/or **Hidden** check boxes under the **Protection** tab.
 8. Click **OK**.

PROTECTING THE SHEET

1. Click on the **Tools** menu.
2. Point to **Protection** and click **Protect Sheet**. The Protect Sheet dialog box appears.
3. Type a password (optional) to be able to unprotect the sheet if modifications are required later.
4. Remove the checkmark from **Select Locked Cells**. For example, users working with a template, would not be able to be on these cells.
5. Re-save these changes.

EX: PRACTICE #6

1. Save the workbook as a template called **My Spring Grade Book**.
2. Make sure that only the cells with the formulas or functions are locked and hidden. Everything else must be unlocked and visible.
3. Erase the students' names, grades and the year.
4. Protect the worksheet.
5. Re-save your template.
6. Create a new workbook from your template. Enter data for one student (name and grades) and see what it shows for the total, averages, and charts.

MAKING DECISIONS

- There are times in which depending on the outcome of our values, Excel can make decisions about what to do next.
- To do that, we must use the **IF** function.
- Example:
 - Let's say that we want to determine if the content of **A5** is greater than **\$1,000**.
 - If that is the case, we want to assign a bonus of **\$500** to cell **B5**.
 - However, if **A5** is equal to or less than **\$1,000**, then no bonus should be given.

MAKING DECISIONS

- Using the **IF** function we would type the following
 1. Click on **B5**.
 2. Click the **Insert **F**unction** box on the formula bar (looks like *fx*). The Insert Function dialog box appears.
 3. Select the **IF** function from the list of the most recently used functions.
 4. Click **OK**. A dialog box called Function Arguments appears.
 5. In **Logical_Test**, type **A5 > 1000**
 6. In **Value_if_True**, type **500**
 7. In **Value_if_False**, type **0**
 8. Click **OK**
- If the value of A5 changes, the bonus in A5 might also change.

EX: PRACTICE #7

1. Open the template from **practice #6** and unprotect it.
 2. In **M3**, type **Lab Letter Grade**.
 3. For each student, compute the letter grade using the following criteria:
 - Letter grade **A** for a score of **90** or better.
 - Letter grade **B+** for a score of **85 – 89**.
 - Letter grade **B** for a score of **80 – 84**.
 - Letter grade **B-** for a score of **75 – 79**.
 - Letter grade **C** for a score of **70 – 74**.
 - Letter grade **C-** for a score of **65 – 69**.
 - Letter grade **D** for a score of **60 – 64**.
 - Letter grade **F** for a score of **59** or less.
 4. Protect the worksheet.
 5. Re-save your template.
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MANAGING SCENARIOS

- Scenarios are part of a suite of commands sometimes called what-if analysis tools.
- A scenario is a set of values that Microsoft Excel saves and can substitute automatically in your worksheet.
- You can use scenarios to forecast the outcome of a worksheet model.
- You can create and save different groups of values on a worksheet and then switch to any of these new scenarios to view different results.

CREATING SCENARIO

1. On the **Tools** menu, click **Scenarios**.
2. Click **Add**.
3. In the **Scenario name** box, type a name for the scenario.
4. In the **Changing cells** box, enter the references for the cells that you want to change.
 - **Note** To preserve the original values for the changing cells, create a scenario that uses the original cell values before you create scenarios that change the values.
5. Under **Protection**, select the options you want if you want to prevent others from changing your scenarios.
6. Click **OK**.
7. In the **Scenario Values** dialog box, type the values you want for the changing cells.
8. To create the scenario, click **OK**.
9. If you want to create additional scenarios, click **Add** again, and then repeat the procedure. When you finish creating scenarios, click **OK**, and then click **Close** in the **Scenario Manager** dialog box.

EX: PRACTICE #8

1. Open the workbook from **practice #1**.
2. Add a scenario called **Default Lab 3**.
3. Select the Lab 3 cells of the first three students as the changing cells. This scenario will contain the original values.
4. Add a scenario called **High Lab 3**.
5. Select the Lab 3 cells of the first three students as the changing cells.
6. Set all the grades to **92**
7. Compare the averages from both scenarios.
8. Re-save your work

GOAL SEEK

- Goal Seek is also part of a suite of commands sometimes called what-if analysis tools.
- When you know the desired result of a single formula but not the input value the formula needs to determine the result, you can use the Goal Seek feature available by clicking **Goal Seek** on the **Tools** menu.
- When goal seeking, Microsoft Excel varies the value in one specific cell until a formula that's dependent on that cell returns the result you want.

USING GOAL SEEK

1. On the **Tools** menu, click **Goal Seek**.
2. In the **Set cell** box, enter the reference for the cell that contains the formula you want to resolve. (In the example, this is cell B4.)
3. In the **To value** box, type the result you want. (In the example, this is -900.)
4. In the **By changing cell** box, enter the reference for the cell that contains the value you want to adjust. (In the example, this is cell B3.)
 - ❑ **Note** This cell must be referenced by the formula in the cell you specified in the **Set cell** box.

EX: PRACTICE #9

1. Use the same workbook as in **practice #8**.
2. Use Goal Seek to find out what grade should **Matt** get in Lab 3 to get an average of **87** in her labs. Is it possible from the student's standpoint?
3. Re-save your work.

CREATING DIAGRAMS

- Excel provides the following types of diagrams:
 - *Organization Chart*: show hierarchical relationships, such as within a company.
 - *Cycle diagram*: Used to show a process with a continuous cycle.
 - *Radial diagram*: Used to show the relationships of a core element.
 - *Pyramid diagram*: Used to show foundation-based relationships, such as a series of skills.
 - *Venn diagram*: Used to show the areas of overlap among sets of items.
 - *Target diagram*: Used to show steps towards a goal.

CREATING DIAGRAMS

- Follow these steps:
 1. Click **Diagram** from the **Insert** menu.
 2. Select a diagram.
 3. Customize the diagram.
 4. Move the diagram to its proper location.

EX: PRACTICE #10

1. Open the workbook from **practice #1**.
2. Insert a new sheet called **Diagrams**.
3. Create a **Radial diagram**, in which the Student's final grade category is the core element. Add whatever elements are related to this core element.
4. Create a **Process diagram** that describes the teaching-learning process that you use in your classroom.
5. Create a **Pyramid Diagram** that describes the most important concepts that a student must learn from your topic, which the concept at the base is the most important.

HYPERLINKS

- Text that represents a hyperlink is displayed underlined and in a color that coordinates with your color scheme.
- Pictures, shapes and other object hyperlinks have no additional formatting. You can add action settings, such as sound or highlighting, to emphasize hyperlinks.

USING HYPERLINKS TO CONNECT WORKSHEETS

■ Follow these steps:

1. Click **Insert**.
2. Click **Hyperlink**. The Insert Hyperlink dialog box appears.
3. In the **Link to** section, click the **Place on This Document** button. The slide list is displayed.
4. From the slide list, select the slide where you want the link to go to when clicked.
5. In the **Text to Display** box, type the name for the link.
6. Click **OK**.

USING HYPERLINKS TO GO TO WEBSITES

■ Follow these steps:

1. Click **Insert**.
2. Click **Hyperlink**. The Insert Hyperlink dialog box appears.
3. In the **Link to** section, click the **Existing File or Web Page** button.
4. In the **Address** box, enter the desired web page's URL address.
5. In the **Text to Display** box, type the name for the link.
6. Click **OK**.

EX: PRACTICE #11

1. Go to the lab worksheet from **practice #9**.
2. Create a link in **M1** called **Go to Homework**. It should connect to the Homework worksheet.
3. Create a link in **A25** called **Visit Microsoft** that points to the Microsoft website:
<http://www.microsoft.com>.
4. Re save your work.

MACROS

- You can automate tasks with a macro for those tasks you perform repeatedly in Microsoft PowerPoint.
- A macro is a series of commands that is stored in a Microsoft Visual Basic module and can be run whenever you need to perform the task.

RECORDING A MACRO

- Follow these steps:

1. On the **Tools** menu, point to **Macro**, and then click **Record New Macro**.
2. In the **Macro name** box, enter a name for the macro.
 - **Note:**
 - The first character of the macro name must be a letter.
 - Other characters can be letters, numbers, or underscore characters.
 - Spaces are not allowed in a macro name; an underscore character works well as a word separator.
3. In the **Store macro in** box, click the location where you want to store the macro.

RECORDING A MACRO

4. If you want to include a description of the macro, type it in the **Description** box.
5. Click **OK**.
6. Record the actions you want for the macro, and then on the **Stop Recording** toolbar, click **Stop Recording**.

RUNNING A MACRO

- Follow these steps:

1. Open the presentation that contains the macro you want to run.
2. On the **Tools** menu, point to **Macro**, and then click **Macros**.
3. In the **Macro name** box, click the name of the macro that you want to run, and then do one of the following:
 - If you want to run a macro in a worksheet, click **Run**.
 - If you want to run a macro from a Microsoft Visual Basic module, click **Edit**, and then in Microsoft Visual Basic Editor, click **Run Sub/UserForm** on the toolbar.

EX: PRACTICE #12

1. In the **Lab** worksheet, record a Macro called **TeacherDefault**. The following actions should be recorded.
 - The font in the entire worksheet should be set to **Century Gothic** size **12**.
 - The entire first row should be set in **Bold** and **Green**
 - The entire third row should be set to **Bold** and a Light Turquoise background.
2. Once that you finish recording it, try running the macro in the other worksheet and see what happens.
3. If you like the results, then re save your work.

SECURITY WITH MACROS

- Because macros can contain viruses, be careful about running them.
- Take the following precautions:
 - ❑ run up-to-date antivirus software on your computer
 - ❑ **set your macro security level to high**
 - ❑ **clear the Trust all installed add-ins and templates check box**
 - ❑ use digital signatures
 - ❑ maintain a list of trusted publishers.

SECURITY WITH MACROS

- Follow these steps:
 1. On the **Tools** menu, click **Options**.
 2. Click the **Security** tab.
 3. Under **Macro Security**, click **Macro Security**.
 4. Click the **Security Level** tab, and then select the security level you want to use.
 5. Click the **Trusted Publishers** tab.
 6. Remove the checkmark from the **trust all installed add-ins and templates check box**.
 7. Click **OK** twice.